TOOLIBIN LAKE RECOVERY TEAM

ANNUAL REPORT

1996

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for the
Toolibin Lake Recovery Team

Department of Conservation and Land Management
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SUMMARY

In 1996 the momentum for recovery, established in 1994 and continued in 1995, was maintained. Major achievements included:

- The continuation of the urgent, short term, salt amelioration works. The final stages of the groundwater pumping infrastructure will be completed early in 1997 with pumping due to commence in March 1997.

- Good local rainfall tested the by-pass channel and water control gates. For the first time in many years, good quality water only flowed into the Lake.

- Revegetation and remnant vegetation protection programs continued in the catchment.

- Consultants completed drafts of a monitoring report which will form a sound basis for future monitoring.

- Commencement of new revegetation schemes involving production species such as melaleuca.

The value of the Recovery Team and Technical Advisory Group as forums for decision making and developing inter-disciplinary action has continued.

INTRODUCTION

Toolibin Lake lies about 200 km south-west of Perth at the top of the Northern Arthur River Catchment. This Catchment drains into the Blackwood River, a major south-western river for which a State Government sponsored Catchment Coordinating Group has been established. The nature reserves including and adjoining Toolibin Lake are managed by the Department of Conservation and Land Management (CALM) on behalf of the National Parks and Nature Conservation Authority (NPNCA).

Toolibin Lake is the first in a series of nine lakes and the only major lake in the chain which has not become saline. The Lake and its environs provide important breeding habitat for a variety of waterbirds, and is one of the last inland freshwater lakes in the south-west. It is the only inland lake which has retained a sheoak/melaleuca association across significant parts of the lake floor. Toolibin Lake is classified as a "Wetland of International Importance" under the Ramsar convention.

The Lake is seriously threatened by salinisation and the condition of the Lake and its environs have deteriorated. Without significant, urgent action, the Lake will be rapidly salinised.

In November 1992 consultants prepared a Recovery Plan for Toolibin Lake and surrounding nature reserves using resources from both the Australian Nature Conservation Agency (ANCA) and CALM. At its meeting of 15 January 1993 the NPNCA endorsed this plan and its implementation by an appointed Recovery Team under the general guidance of CALM's Director of Nature Conservation.

Given the complex nature of the issues to be managed, a Technical Advisory Group (TAG) was also established to advise the Recovery Team on recovery actions.

RECOVERY TEAM

During 1996 the Recovery Team met on 6 December. Members of the Team at the close of the year were:

Mr John Blyth (Scientific Adviser, CALM, WATSCU)
Mr Grant Davenport (Farmer, member of the Lake Toolibin Catchment Group)
Mr Richard Pickett (Senior Resources Officer - Monitoring and Investigation, Water and Rivers Commission)
Ms Elsa Dexter (Environment Australia)
Mr Jim Lane (Principal Research Scientist, CALM)
Mr Gordon McDougall (Farmer, member of the Lake Toolibin Catchment Group)
Mr Doug Sawkins (Agriculture WA)
Mr Ken Wallace (Regional Manager, CALM, Chair).

There have been two changes in membership during the year. Peter Helsby was replaced by Richard Pickett, and Ted Rowley by Doug Sawkins.

Technical Advisory Group

The Technical Advisory Group met on 7 February and 27 November 1996. Members of the Group are:

Mr David Bicknell (Revegetation Development Officer, Agriculture WA)
Dr Ray Froend (Research Officer, Water Authority of Western Australia)
Dr Richard George (Research Officer, Agriculture WA)
Dr Stuart Halse (Senior Research Scientist, CALM)
Mr Ken Wallace (Regional Manager, CALM, Chair).

Membership of this group has not changed.

RECOVERY PLAN STATUS AND FUNDING

Plan Status

During 1994 the Recovery Team completed revising the Recovery Plan. The revised Plan was endorsed by the Corporate Executive of CALM on 13 September 1994 and by the NPNCA on 9 September 1994.

The revised Recovery Plan was officially launched by Hon. Kevin Minson MLA, Minister for the Environment and Disability Services, on 11 October 1994. The launch was undertaken at Toolibin Lake, and received wide coverage in the Western Australian media.

The Recovery Plan is current until September 2003, a period of 10 years. This term is consistent with other management plans produced by CALM. So that this period is more accurately reflected in the Recovery Plan Implementation Schedule, the latter was shifted forward to begin in 1994.

Plan Funding

Effective implementation of the Recovery Plan is dependent on works in the Toolibin Catchment as well as those more directly aimed at the Lake's immediate environment. Works implemented by the Toolibin Catchment Group, a sub-group of the Wickepin Land Conservation District Committee, are therefore very important. While the Recovery Team and Catchment Group have overlapping memberships and communicate well, they are each responsible for their own actions. Some resources, for example those of Alcoa, have been channelled through the Catchment Group rather than the Recovery Team. Although the resulting actions are relevant to the implementation of the Recovery Plan, they should be credited to Alcoa and the Catchment Group, not the Recovery Team.

Similarly, CALM, with assistance from Commonwealth Programs, is using Toolibin as an oil mallee trial site. While this work contributes to the recovery of Toolibin, its goal is sustainable land use through productive use of woody vegetation. Other projects aimed at both the recovery of Toolibin and the achievement of broader land use goals are:

1. The Toolibin Alley Farm Trial (TAFT), which CALM continues to fund.

2. A melaleuca seedling and direct seed trial, to be funded through the Salinity Action Plan. Planning and initial work for this project began in 1996.

The use of the Toolibin recovery process as a means for, concomitantly, achieving sustainable land use goals at a much broader level is an important aspect of recovery works.

As with previous annual reports, the account here of recovery actions is aimed at describing implementation of the Toolibin Lake Recovery Plan by whatever means and is not a summary of the Recovery Team's activities alone. To avoid giving offence, care should therefore be taken with any statements or inferences based on this report that ascribe credit to individuals or groups.

Resources and assistance from the following groups have contributed to plan implementation over the 1996 calendar year:

Agriculture Western Australia (Ag WA)
Alcoa
BankWest *Landscope* Conservation Visa Card
CALM
Commonwealth Farm Forestry Program
Endangered Species Program, Environment Australia (formerly ANCA)
Narrogin Land Conservation District Committee
National Landcare Program
Nomans Lake Catchment Group
Salinity Action Plan Funding
Toolibin Catchment Group
Toolibin catchment landholders
Water Corporation
Water and Rivers Commission
Wickepin Shire Council.

RECOVERY PLAN ACTIONS

For ease of referencing, numbers used below refer to those of the Implementation Schedule in the Recovery Plan. Costings for each section are shown in Attachment 1.

1. Groundwater Pumping

Air displacement pumps have been fitted to six production bores on the Lake floor. A power source to deliver air to the pumps has been established.

Tenders have been analysed and a contractor selected for the final pumping stage - the transfer of groundwater to Lake Taarblin. Pumping is planned to commence in March 1997.

2. Surface Water Control

Toolibin Catchment landowners have completed creek regeneration works and have continued with works on grade banks. These tasks are aimed at reducing waterlogging and will eventually, with other works, decrease recharge of groundwater.

3. Lake Inlet Control and 'Separator'

In 1996 the separator channel and inlet control were tested by a good winter rainfall and catchment runoff. By daily testing of the water quality, the gate structure was manipulated to ensure only 'fresh' (< 1500 mg/L TDS) water flowed into Toolibin Lake. The Lake filled to approximately half during the 11 days of water flow.

4. Lake and Reserve Revegetation

A post graduate student from Edith Cowan University WA, commenced a study on the natural revegetation of *Casuarina obesa* on the Lake floor. Four plots of seedling revegetation were fenced to exclude grazing. Observations, however, were affected by water in the Lake but will recommence once the water level drops.

5. Catchment Revegetation

The NLP-funded Toolibin Revegetation Manual has been completed and printed. The manual was written by a consultant with input from landholders and staff from Ag WA and CALM. The finished product is of excellent quality and is now available to the public.

Under the CALM-Commonwealth Forestry Program oil mallee project, 415 000 eucalyptus seedlings were planted in the Toolibin Catchment in 1996. This project is being carried out on freehold land and is a cooperative project with landholders.

Landholders have also undertaken other revegetation in 1996. Figures on both catchment revegetation and remnant vegetation protection by landholders are given in Attachment 2.

Infilling for the Toolibin Alley Farm Trial also took place with over 5 000 seedlings being planted on the two properties.

Funded through the State Salinity Action Plan, work on a melaleuca trial has begun. The trial, based on an alley design, will test melaleuca species for both cineole production and the potential to lower groundwater levels. Planting will take place in winter 1997.

6. Agronomic Manipulation

Most significant have been increased trials of higher water-using pasture species, particularly lucerne and serredella.

7. Decision Support System

The first steps towards this system will be taken with the development of a groundwater pumping model. Although planned for 1996 it will now be undertaken in 1997.

8. Monitoring and Reporting

Parts one and two of a monitoring report, completed by a consultant, are now being commented on by members of the TAG. Once amended it will be submitted as a final report and used as a basis for planning future monitoring programs.

9. Other

9.1 Salt Harvesting

A definition study of a salt harvesting project was completed by a private consultant.

Given that pumping will take place, there is a commitment to further investigate salt harvesting. It is now planned to complete a detailed definition study in 1997.

As Chair of the Toolibin Lake Recovery Team and Technical Advisory Group, I take this opportunity to thank members of these groups for their excellent contribution over the past 12 months.

ATTACHMENT 1

Expenditure and works by ANCA (now Environment Australia) and CALM at Toolibin Lake during 1996. These funds do not include the significant funds expended in general management of Toolibin and its projects at a Regional level.

TASK	ANCA $	CALM $
1. Groundwater pumping.	104252	25463.25
2. Taarblin groundwater monitoring (private property and lake floor) and establishment of 6 piezometers on eastern side of Toolibin Lake.		10036.75
3. Assess salt harvesting.	7000	
4. Run, maintain and monitor pumps.	1687	
5. Toolibin alley farming trial.		
6. Monitoring program design and collect data.		27500
7. Melaleuca trial.		500
TOTAL	**112939**	**63500**

ATTACHMENT 2

Summary of group project works completed, within the Toolibin Catchment, in 1996.

Sub Catch-ment	Tag Seed (km)	Tag Seed-ling (No)	Native seed-ling (No)	Native seed (Kg)	Pine seed-ling (No)	Fncing for reveg (km)	Fcing for rem bush (km)	Intecpt & grade banks (km)
West Tool. Alcoa		19000	9050		500	15.6		
Scriv Soak Alcoa			7850	1	200	10.2		
Scriv Soak West'n Power			34500			17.8		
Scriv Soak GRF							17.9	
South Tool BCCG	40		3500	7		18		11
Total	**40**	**19000**	**54900**	**8**	**700**	**61.6**	**17.9**	**11**

In addition to the above, the following activities were also completed:

- Seedlings bought and planted by individual landholders (not part of a group project).
- Babbebilly Reserve Creek was cleaned of fallen debris with a rubber tyred stick rake (as recommended by CALM and Ag WA) as a community project.
- Brown Road Reserve was sprayed, ripped and planted as part of an ongoing community project.